

TITLE	Consultant Staff
DESCRIPTION	Appointment of Consultant Staff and Initial Granting of Clinical Privileges
TARGET AUDIENCE	All TPCHHSD Medical Staff

1. Appointment Process

Prior to proceeding with the recruitment and selection process for Senior Medical Officers, and Visiting Medical Officers a detailed Job Description and Assessment Criteria (AC) are drawn up by the relevant Line Manager (Refer to IRM 1.13-3). Also, it is a requirement that the TPCHHSD Job Description format is used. This is available from Human Resource Services. The AC will evidence the qualifications, experience, training and skills required for the position. A Medical Credentials and Privileges Application Form will be appended to the Job Description.

Prior to advertising a consultant position, the Executive Director Medical Services may negotiate with the Executive Dean, University of Queensland, to determine if an academic appointment should be considered.

Following the closing date, the Selection, Appointment and Clinical Privileges Committee will "short list" the application on the basis of all the AC. This process may be carried out either as a meeting or by circulation of the information and in accordance with IRM's 1.13-1, 1.13-2 and 1.13-5.

Interview of short-listed candidates will be conducted in accordance with the Office of the Public Service Merit and Equity Directive 01/04 - Recruitment and Selection.

The Committee will review the Medical Credentials and Privileges Application Form and consider the training and experience of the successful applicant and advise the Chairman of the Committee of the acceptability of the applicant's credentials and the recommended clinical privileges.

The recommendation from the Selection, Appointment and Clinical Privileges Committee will be forwarded to the District Manager and will contain advice relating to Clinical Privileges. The letter of appointment will contain information regarding privileges. Written acceptance of the position will indicate acceptance of the privileges so defined.

If the preferred applicant does not accept the position for whatever reason, the recommendation of the Selection Appointment and Clinical Privileges Committee on the next most preferred applicant will be accepted.

2. The Members of the Selection Appointment and Clinical Privileges Committee

The Committee may include the following:

- Medical Director of the specific Clinical Program (Chair)
- Executive Director Medical Services
- Director of Department or Unit, as appropriate
- Representative of the Specialist College or Society
- Head, Central Clinical School (or Nominee)
- Representative of Medical Advisory Committee

Emeritus Consultant

An Emeritus Consultant is an appointment offered to retired Senior Medical Officers, Visiting Medical Officers and University Medical Officers in recognition of the significant contribution that made to the District. Recommendation for an Emeritus Consultant appointment is to be made by the Medical Advisory Committee to the Executive Director of Medical Services. The Executive Director of Medical Services, then makes a recommendation to the District Manager.

Individuals appointed as Emeritus Consultants are entitled to use the title as Post Nominal

Criteria for being recommended as an Emeritus Consultant include:-

Absolute Criteria

- Has retired from permanent employment with the District.
- Is recognised by colleagues as having contributed significantly to the profession and to the District.
- Is recognised as a national leader in a speciality.

Relative Criteria

- Service to District in a professional capacity for a significant period (approximately 10 years)
- Contribution to teaching (which may be under or postgraduate)
- Contribution to research
- Involvement in professional medical activities.

MARKETING/COMMUNICATION

Marketing/Communication Responsibility

EDMS

Marketing/Communication Strategy

- Strategy - Notification to all medical staff
- Notice in the Leader

AUDIT STRATEGY

Level of Risk

Low

Audit Strategy

Audit Tool Attached

Audit Date

Audit Responsibility

Key Elements/Indicators/Outcomes

REVIEW STRATEGY

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Review Responsibility EDMS

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Author/s, Position & Business Area

- Dr Michael Cleary, EDMS, Medical Administration
- Bernadette Sinclair, NM, Policy and Procedure
- Peter Thompson, HR Services
- Dr Keith McNeil, Chair, Medical Advisory Committee

Replacement For 020004V1
Information Source IRM's 1 13-1, 1, 1 13-2 and 1 13-3, OPSME Directive 01/04 – Recruitment and Selection
Further Reading

SEARCH INFORMATION

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EQulP and other Standards Human Resource Management

Endorsement

Signature Date
Dr Keith McNeil
Chair, Medical Advisory Committee

Approval

Signature Date
Dr Michael Cleary
Executive Director Medical Services

Authorisation for electronic publication on QHEPS

Signature Date
Gloria Wallace
District Manager

TITLE	Medical Staff Management
DESCRIPTION	Guidelines for Management of Medical Staff within the Prince Charles Hospital Health Service District
TARGET AUDIENCE	All TPCHHSD Medical Staff

1. Organisational Arrangements

The Prince Charles Hospital and Health Service District is managed internally on clinical lines with medical clinical specialists appointed as Medical Directors of the Clinical Programs. Line management within the Clinical Programs is coordinated through the Program Management Team. The Program Management Teams comprise:

- Medical Director
- Nursing Director
- Business Manager

Within the Clinical Programs there are Departments and Units, which are headed by an appointed Director. Department or Unit Medical Directors together with the respective Nurse Unit Manager are responsible for:

- Coordinating of Department or Unit meetings
- Management of policy issues (within Queensland Health and District Guidelines)
- Management of day to day operation of the Department or Unit.

Directors of Departments or Units report to the Medical Director of the Clinical Program.

The **Queensland Health Pathology Service** located on the Chermside Campus is headed by a permanently appointed Managing Pathologist who liaises with the Executive Director of Medical Services.

2. Appointment Process

All medical appointments are made in accordance with the appropriate Award or Directive and follow the procedures outlined in the *Office of Public Service Directive 5/97 - Recruitment and Selection and Queensland Health's Credentials Clinical Privileges and Appointments for Medical Practitioners*. The District Procedure relating to appointments is outlined in the District Procedure "Appointment of Consultant Staff". (PROPCH020004)

Credentials will be assessed and privileges recommended by the Selection, Appointment and Clinical Privileges Committee. The management of Clinical Privileges is outlined in the District Procedure "Medical Credentials and Clinical Privileges". (PROPCH000136)

Permanently appointed medical staff are required to complete an initial 12 month probationary period and to undertake subsequent performance planning and review.

Visiting Medical Officers (VMO) or Senior Medical Officers (SMO) may apply to a University for a Clinical Academic Title. A Joint University/Hospitals Committee is convened to consider these applications.

3. General Responsibilities of Medical Staffing

The following are the general responsibilities of medical staff:

- Maintain registration with the Queensland Medical Board. Medical staff identified as not being registered, cannot carry out clinical duties and will be stood down.
- Conform with the Queensland Health "Code of Conduct".
- Wear a Medical Staff Identification (ID) Badge at all times when on duty. District staff may refuse entry or refuse to carry out instructions of Medical Staff who do not display a Medical Staff ID Badge.
- Participate in Quality Improvement activities relevant to the position.
- Be involved in research and education activities appropriate to the level of appointment. Consultant Medical practitioners have a responsibility to foster research at both junior and senior medical staff level and to participate in the undergraduate and post graduate medical education.
- Participate in on-call and emergency call rosters.
- Support the District by working on committees and through attendance at appropriate Departmental, Program and District meetings.

4. Categories of Medical Staff

There are a number of categories of medical staff -

- Senior Medical Officer - (Specialist and Non Specialist)
- Visiting Medical Officer - (Specialist and Non-Specialist)
- University Medical Officer
- Emeritus Consultant
- Assistant Medical Officers
- Observer Medical Officer
- Resident Medical Officer
- Other Medical Practitioners

Senior Medical Officers and Visiting Medical Officers

Permanently Appointed Senior Medical Officers and Visiting Medical Officers are appointed to the District following a formal recruitment and selection process. The Selection Appointment and Clinical Privileges Committee operates in accordance with the District procedure "Appointment of Consultant Staff". (PROPCH020004)

Both the VMO's Directive and the Senior Medical Officers' Award allow for appointment at Senior Specialist levels.

Senior Medical Officers and Visiting Medical Officers may be appointed on a temporary or casual basis to meet specific requirements (e.g. training, continuity of care or lack of in-house specialist skills). The Executive Director Medical Services approves all such appointments and approves interim clinical privileges for the appointee.

Senior Medical Officers and Visiting Medical Officers who are appointed to other Queensland Health Districts may be required to provide clinical service within the District. In general these doctors fulfil a specific need for specific clinic expertise. The Executive Director Medical Services approves all such arrangements and ensures that, appropriate financials and clinical privileges are in place.

University Medical Officers

University Medical Officers are appointed and employed by the University of Queensland or The Queensland University of Technology. In any such appointment, whether a joint appointment or a fully University funded appointment, the District will determine the Clinical Privileges of the University Medical Officer before the medical officer commences work within the District.

Emeritus Consultants

Emeritus Consultants are staff who have retired from Clinical Practice and who have been recognised by the District for outstanding service. The process for awarding Emeritus Consultant staff is outlined in the procedure "Appointment of Consultant Staff". (PROPCH020004)

Assistant Medical Officers

Visiting Medical Officers who are specialists may obtain assistance from Medical Practitioners who are not members of the hospital's medical staff. This assistance may take the form of assistance at operations, or assistance with special diagnostic or therapeutic procedures. The Visiting Medical Officer remains responsible for the actions of the Assistant Medical Officer. The Executive Director Medical Services approves all such arrangements and ensures that appropriate Clinical Privileges are in place.

Assistant Medical Officers must be registered by the Queensland Medical Board. Where the Assistant Medical Officer is providing a specialist service, the practitioner must hold appropriate specialist registration and be privileged to provide this service.

Observer Medical Officers

Observer Medical Officers attend the District to upgrade clinical skills. There are two classes of Observer Medical Officers: those without medical registration with the Queensland Medical Board and those with General or Specialist registration with the Queensland Medical Board. Observer Medical Officers without registration may not perform any patient care however, may be present in clinical areas as observers. The Observer Medical Officer must wear an ID Badge at all times. Such arrangements are approved by the Director of Clinical Training (DCT).

Observers who hold specialist qualification and who are registered as specialists with the Queensland Medical Board may be allowed to assist at operations or assist with special diagnostic or therapeutic procedures under the supervision of a Senior Medical Officer or Visiting Medical Officer. This is subject to and approval of the arrangements, by the Executive Director Medical Services and confirmation of privileges by the Executive Director of Medical Services.

Resident Medical Officers

The District appoints Resident Medical Officers on an annual basis. Registrar appointments are made after recommendation from the appropriate Medical Director. All categories of Resident Medical Officer staff are appointed on contracts of up to 12 months.

There are a number of categories of Resident Medical Officers -

- **Interns** - Resident Medical Officers in the first postgraduate year, who must complete Intern year to qualify for full registration with the Queensland Medical Board.
- **Junior House Officers** - Resident Medical Officers in the second postgraduate year.
- **Senior House Officers** - Resident Medical Officers in the third and subsequent postgraduate years.
- **Principal House Officers** - Resident Medical Officer in non-accredited specialty training programs.
- **Registrars** - Resident Medical Officers participating in an accredited specialty training programs.
- **Senior Registrar** - A Resident Medical Officer possessing specialist registration, specifically appointed to an advertised Senior Registrar position, which includes significant Clinical Administration duties.

Medical Practitioners

The General Practitioner (GP) who is named in the patient record as the treating General Practitioner of a patient may visit the patient. On presentation of proof of Medical Practitioner status, and with the consent of the patient and treating Specialist, the General Practitioner may read the patient record and write notes in same.

General Practitioners may not order treatment or investigations except where the GP is the principal treating doctor, as occurs at Eventide Nursing Care Unit, Ashworth House and Jacana Centre.

This class of Medical Officer includes those doctors engaged in private medical practices within District facilities

5. Performance Planning and Review

All Senior Medical Officers and Visiting Medical Officers will have performance reviewed. This review will be undertaken by the Medical Officer's line manager.

Should concerns exist about the clinical competence of a Medical Officer, the District Manager, Executive Director of Medical Services, Program Medical Director, Department Head or Facility Manager, may request a review of the Practitioner's clinical privileges by the District's Medical Credentials and Clinical Privileges Committee

6. Issues of Workload

Where workloads are recognised as being above or below the available staffing resources, all medical staff are expected to bring this to the attention of the Unit, Department Director, Program Medical Director, Deputy Director Medical Services or Executive Director Medical Services

7. Indemnity Cover

Queensland Health indemnifies medical staff as outlined below, who diligently and conscientiously endeavour to carry out duties or functions. Indemnity cover may not be provided where a person has been guilty of criminal negligence, wilful misconduct or recklessness. The details of Indemnity arrangements are outlined in IRM 3.8-4.

The indemnity cover applies to -

- Visiting Medical Officers, Senior Medical Officers, University Medical Officers and Resident Medical Officers treating public patients
- Senior Medical Officers undertaking on-site private practice under both Option A and Option B arrangements,
- Resident Medical Officers attending private patients of Senior Medical Officers, Visiting Medical Officers or University Medical Officers as part of normal employment.

The indemnity does NOT extend to -

- Visiting Medical Officers treating private patients
- Visiting Medical Officers employed on a contract basis, treating public or private patients
- University Medical Officers treating private patients
- University Medical Officers performing academic research or teaching activities

8. Medical Care

Each patient shall have a Medical Officer who is directly responsible for the medical care. The name of the practitioner will be recorded in the patient's hospital records. In some units, patient responsibility is shared amongst two or more District's Medical Officers. This is acceptable providing all Medical Officers are members of the medical staff.

The District recognises and endorses that some specialist units transfer the care of patients from one Medical Officer to another as determined by roster arrangements

The Medical Officer responsible for a patient's care is accountable for decisions in relation to treatment, admission, transfer or discharge. The Medical Officer responsible for a patient's care will attend the patient while in hospital with reasonable frequency - as dictated by the clinical condition of the patient.

The patient is entitled to request a second medical opinion on the condition, planned treatment or available options.

Resident Medical Officers shall only manage patients on behalf of the Senior Medical Officer, Visiting Medical Officer, or Assistant Medical Officer responsible for the patient's care. It is the responsibility of the Medical Officer responsible for the patient's care to give clear instructions to the Resident Medical Officer for the management.

The Medical Officer responsible for a patient's care must ensure that adequate medical records including a medical history, a statement of diagnosis, relevant medical problems and significant orders and treatment are kept. This requirement applies equally to both private and public patients. All orders for treatment for a patient shall be written in the patient's records. In situations where it is not possible to write an order, telephone orders may be given to a Registered Nurse as a temporary measure providing these orders are signed by the Medical Officer within 24 hours of the telephoned orders. A discharge summary diagnosis shall form an integral part of the Patient's record. All patients (*public and private*) must have a discharge referral forwarded to the patient's General Practitioner, a copy of which will be included in the patient record.

Intermediate/Private Patient Care

Permanently appointed Consultants who are Visiting Medical Officers, University Medical Officers and Senior Medical Officers, and who have hospital privileges, are entitled to admit, treat or carry out diagnostic procedures on patients who have elected to be treated as a Private, Compensable, Veterans Affairs or Ineligible Patient. Relieving Consultants fulfilling a specific period of locum cover are also permitted to make use of Private Practice access arrangements during the period of the locum. This access is not available to Consultants providing ad hoc relief

MARKETING/COMMUNICATION

Marketing/Communication Responsibility	EDMS
Marketing/Communication Strategy	<ul style="list-style-type: none">• Strategy - Notification to all medical staff

AUDIT STRATEGY

Level of Risk	Moderate
Audit Strategy	Probation record for newly appointed Medical Officers authorised by Line Managers. Selection Appointment and Clinical Privileges approved by District Manager Annual Medical Registration check performed or Executive Director Medical Services for all Medical Staff (September)
Audit Tool Attached	No
Audit Date	27 November 2005
Audit Responsibility	EDMS / DDMS
Key Elements/Indicators/Outcomes	

REVIEW STRATEGY

Review Date	06 September 2006
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Review Responsibility

EDMS

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Author/s, Position & Business Area

- Bernadette Sinclair, NM, Policy and Procedure
- Dr Luis Prado, DDMS, Medical Administration
- Dr Michael Cleary, EDMS, Medical Administration
- Dr Keith McNeil, Chair, Medical Advisory Committee

Key Stakeholders who reviewed *this version*, Position & Business Area

Replacement For

Information Source

Further Reading

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Organisational Structure

EQuIP and other Standards

Human Resource Management

Endorsement

Signature

Date

Dr Keith McNeil

Chair, Medical Advisory Committee

Approval

Signature

Date

Dr Michael Cleary

Executive Director Medical Services

Authorisation for electronic publication on QHEPS

Signature

Date

Gloria Wallace

District Manager

**THE PRINCE CHARLES HOSPITAL
HEALTH SERVICE DISTRICT**

PROCEDURE

PROPCH000136v3

TITLE	Medical Credentials & Clinical Privileges
DESCRIPTION	Guidelines for review of medical staff credentials and appropriate clinical privileges
TARGET AUDIENCE	All TPCHSD Medical Staff

Clinical privileges are granted to appropriately qualified, trained and experienced Senior Medical Officers, Visiting Medical Officers and Assistant Medical Officers to undertake clinical care within the District.

1. DEFINITIONS

Credentials represent the formal qualifications, training, experience and clinical competence of the medical practitioner. Documentary evidence of credentials could include University Degrees, Fellowships of Professional Colleges or Associations, Registration by Medical Boards, Certificates of Service, Certificates of completion of specific courses, periods of verifiable formal instruction or supervised training, information contained in confidential professional referee reports and medical indemnity history and status.

Clinical Privileges equates to a medical practitioner being granted permission to provide specified medical services within specific health care facilities. Privileges granted to one health care facility are not automatically transferable to another facility. Likewise, the extent of privileges granted may vary from one facility to another, dependent on resources and role delineation between facilities.

2. AUTHORITY FOR GRANTING OF PRIVILEGES

The Medical Credentials and Clinical Privileges Committee reviews credentials and recommend appropriate clinical privileges for existing Senior Medical Officers, Visiting Medical Officers, University Medical Staff, and Assistant Medical Officers. The Selection Appointment and Clinical Privileges Committee when it convenes to appoint Visiting Medical Officers and Senior Medical Officers is responsible for accessing credentials and recommending clinical privileges for new appointments.

The District Manager is the delegated officer with responsibility to confer clinical privileges, based on recommendations from the Medical Credentials and Clinical Privileges Committee or from the Selection Appointment and Clinical Privileges Committee (as detailed in the District Procedure "Appointment of Consultant Staff" (PROPCH020004). The District Manager may confer privileges no wider than those recommended.

The Executive Director Medical Services may approve interim privileges for temporary or locum appointees.

3. COMMITTEE MEMBERSHIP OR THE MEDICAL CREDENTIALS AND CLINICAL PRIVILEGES COMMITTEE

Core membership of the Committee comprises -

- Chair of the Medical Advisory Committee (Committee Chair)
- Executive Director of Medical Services
- Member nominated by the Medical Advisory Committee

The Committee will invite input from the relevant Program Medical Director. Advice from the respective College and/or specialist society will be sought as required.

The Committee can either convene or consider matters out of session.

The Selection Appointment and Clinical Privileges Committee detailed in The District Procedure "Appointment of Consultant Staff" (PROPCH020004) acts with the authority of the Medical Credentials and Clinical Privileges Committee in respect of considering credentials and recommending privileges for Senior Medical Officers and Visiting Medical Officers when being appointed to the District.

The Committee may from time to time convene a "Specialist Advisory Panel" to consider specific issues which are of a complex nature. This Specialist Advisory Panel acts with the authority of the Medical Credentials and Clinical Privileges Committee. The membership of the Specialist Advisory Panel is to include:

- Chair, Medical Credentials and Clinical Privileges Committee
- Executive Director Medical Services
- Medical Director(s) of the relevant Program or Programs
- Internal or external specialists who can provide advice on the specific issue being considered.

4. CRITERIA TO BE USED IN EVALUATING CLINICAL PRIVILEGES

The Applicant

- Possession of (or eligibility to obtain) registration with the Queensland Medical Board;
- Qualifications and training appropriate to the privileges applied for;
- Clinical experience and competence in the appropriate field of expertise;
- Commitment to continuing professional education and quality assurance activities;
- Physical and mental fitness to practice.

The Health Care Facility

- Facilities, equipment and financial resources available;
- Availability of necessary support services;
- Role delineation of the facility;
- The scope of services provided by the facility.

5. DURATION OF PRIVILEGES AND TIMING OF REVIEW

Privileges granted will be subject to three yearly reviews, excepting --

- At time of initial appointment, a one (1) year probationary period applies for that appointment;
- With the termination of appointment; or

- If the appointee cease to be legally entitled to practice medicine

A review of clinical privileges granted can be undertaken at the request of the Director General, District Manager, Executive Director Medical Services or Program Medical Director. Such review is not a mechanism for dealing with disciplinary or other administrative matters and should only be used when concerns are expressed about clinical competence

A Medical Officer may also request review or extension of existing clinical privileges at any time.

Information will be collected and stored on the Queensland Health Medical Credentials and Clinical Privileges database. This database is confidential and access is limited to approved users. The database will be maintained and regularly updated by Medical Administration.

RIGHT OF APPEAL

- A practitioner, whose request for privileges has been denied, withheld or granted in different form to that requested, will be advised in writing and provided with the rationale for the recommendation.
- The practitioner should also be advised of the right to appeal against the decision.
- Such appeal should be made to the District Manager within 28 days of receipt of notification of recommendation.
- The appellant is required to submit reasons as to why privileges should be reconsidered, addressing any issues of deficiency raised by the Medical Credentials and Clinical Privileges Committee.
- The District Manager shall request the Medical Credentials and Clinical Privileges Committee convene within 28 days of appeal being received.
- Should the reconsidered recommendation not be acceptable to the appellant, then that individual has the right to further appeal the decision. At which point, the District Manager will refer the matter to the Chief Health Officer who shall convene a Privileges Appeals Tribunal.

EVALUATION

- All Credentials and Privileges are reviewed every 3 years, except as outlined above.

MARKETING/COMMUNICATION

Marketing/Communication Responsibility

EDMS

Marketing/Communication Strategy

- Strategy - Notification to all medical staff

AUDIT STRATEGY

Level of Risk

Medium

Audit Strategy

Audit Tool Attached

Audit Date

Audit Responsibility

Key Elements/Indicators/Outcomes

REVIEW STRATEGY

Review Date

06 September 2006

Review Responsibility

EDMS

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Author/s, Position & Business Area
Key Stakeholders who reviewed *this version*, Position & Business Area

- Dr Michael Cleary, EDMS, Medical Administration
- Dr Keith McNeil, Chair, Medical Advisory Committee
- Bernadette Sinclair, NM, Policy and Procedure

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Information Source
Further Reading

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Endorsement

Signature Date
Dr K McNeil
Chair, Medical Advisory Committee

Approval

Signature Date
Dr M Cleary
Executive Director Medical Services

Authorisation for electronic publication on QHEPS

Signature Date
Gloria Wallace
District Manager

The Prince Charles Hospital Health Service District

District Patient Safety Committee

Terms of Reference

Rationale

The purpose of the Patient Safety Committee is to review, investigate, analyse and follow up major clinical incidents (whether they are provided by direct referral to the committee or via the AIMS incident reporting system), deaths referred to the Coroner, and deaths that may have been preventable. The team uses a formal, systems based approach to determine the settings in which adverse events occur and identifies system changes to reduce the likelihood of similar occurrences with the aim of reducing the frequency of adverse events.

The Patient Safety Committee will focus on **identifying the factors** which may have led to high risk incidents and adverse events **and taking action in order to prevent similar occurrences**. The Committee has the authority to allocate resources and form working parties as required to take the actions deemed necessary to control any risks identified.

Roles of the Committee

1. Establish and maintain a framework and process for the review of all deaths including; a process for the independent external review of cases where appropriate, and systems to facilitate feedback to the people who initiated the review.
2. Oversee the progress of recommendations resulting from death audits and clinical reviews.
3. Review and monitor:
 - ◆ all incidents referred to the Committee, and
 - ◆ clinical risks identified in the Risk Register
4. Investigate all referred incidents by appropriate means such as case review, consultation with clinical leaders and Clinical Departments, interviews with appropriate personnel, liaison with peak bodies, and root cause analysis.
5. Apply a risk rating to deaths and incidents referred to the Committee and refer 'Very High' to 'Extreme' risks to the District Executive and the District Safety and Quality Committee recommending the form of review of such cases/incidents.
6. Review aggregate benchmark Patient Safety data and investigate and act on variance.
7. Facilitate the development, implementation, revision, communication, and evaluation of clinical policies and procedures identified by the Committee in order to effect system change across the organisation.

Membership

Chair – Elected by the Committee membership annually, each Chair may only hold the Chair for one year at a time. The Chair may nominate another Committee member to act as Chair in their absence.

Full Members

- | | |
|--|---|
| △ Executive Director of Medical Services | △ Consultant Intensivist |
| △ Executive Director of Nursing Services | △ Consultant Psychiatrist |
| △ Deputy Director of Medical Services | △ Medical Officer – Quality Assurance and Audit |
| △ Consultant Physician | △ Quality Manager |
| △ Consultant Surgeon | △ Director, Anatomical Pathology Service. |
| △ Consultant Anaesthetist | |

Meeting Procedures

Meetings – Timing

Fortnightly

Minutes and Privacy Policy

Taken in a 'action minute' format so that patients/clients/residents, work units, and staff identities are not disclosed in order to protect the privacy of all individuals involved in the reviews undertaken.

Quorum

There shall be 50% of members or their representatives present plus one (i.e. at least six members) to constitute a quorum.

Recommendations and Committee Evaluation

The Committee shall promulgate recommendations for all reviews, audits or investigations that it sponsors and will monitor the implementation of such recommendations through the indicators which must be specified as part of any recommendations made.

Safety and Quality Committee Reporting

The Patient Safety Committee acts with the authority of the District Manager, the District Executive and the District Safety and Quality Committee. Any issues which require notification and/or action by the District Executive shall be communicated to the District Executive Committee at the next available opportunity.

The Patient Safety Committee will provide a quarterly report (in March, June, September, and December) to the Safety and Quality Committee outlining the reviews undertaken, the actions initiated and the outcomes achieved since the last report.

Original signed

original signed

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Dr Michael Cleary
Chair, Patient Safety Committee
Executive Director Medical Services

.....
Ms Gloria Wallace
District Manager

The Prince Charles Hospital Health Service District
Patient Safety First –
An Initiative of the TPCHHSD Patient Safety Committee



Lessons Learned #1

Event

A patient who was acutely bleeding after a major operation received incompatible blood components that were intended for another patient.

Core Messages

- Multiple checks have been built into the system that regulates the administration of blood products; however, not all of the requirements of the Australian and New Zealand Society of Blood Transfusion (ANZSBT) Guidelines for the Administration of Blood Components have been incorporated into the District's processes
- Errors in the requesting, supply and administration of blood components create significant risks for patients. A survey of hospital blood transfusion laboratories in the UK in 1993 revealed 111 instances of blood components being transfused to the wrong patient in an 18-month period.
- Clinical teams that treat very complex cases in the post-operative environment may be composed of people from a number of clinical units. Communication is the key in ensuring all the necessary checks are undertaken during complex and difficult clinical situations.

Actions Taken

1. The TPCHHSD Blood and Blood Products Procedure will be reviewed in line with the requirements outlined in the ANZSBT and Royal College of Nursing Australia Guidelines for the Administration of Blood Components
2. The relevant QHPSS proforma will be reviewed to ensure that all steps in the process are checked before any blood or blood components are given.
3. Common processes that comply with the requirements outlined in the ANZSBT Guidelines for the Administration of Blood Components will be adopted for:
 - the management of remote blood fridges, and
 - the checking of the identification of all blood and blood products, with the identification of the patient who is to receive the product, before the product is removed from any blood fridge or Lampson Tube.
4. The TPCHHSD Blood and Blood Products Procedure will be amended to include the following, "The person spiking/hanging the blood or blood component shall be one of the 2 people who have undertaken the component and patient identity check".
5. The use of the QH Skills Centre's Crisis Resource Management training will be investigated to determine the value of the training for clinical teams in theatres and intensive care in the management of complex and difficult clinical situations.



Summary

Errors involving the use of blood components are rare events, however, the possible consequences of these errors are significant.

The use of consistent and auditable processes for the administration of blood and blood components will reduce errors if the processes are adhered to.

Busy clinical teams may focus on the critical care that is required during times of complex and difficult clinical management

Processes need to be practical, simple and robust in this busy environment.

The implementation of the new procedures will be monitored by the District Patient Safety Committee.

Errors are a risk associated with the complexity of modern health care. The policy of Queensland Health is to create *Healthier* hospitals for all Queenslanders and this is achieved through the systematic identification, reporting and investigation of errors. The key aim of these investigations is to design processes that eliminate or minimise the recurrence of such events. The aim of the Lessons Learned newsletter is to provide feedback to District staff on the results of investigations that have occurred.

The future of casemix in emergency medicine and ambulatory care

Michael I Cleary, Richard H Ashby, George A Jelinek and Robert Lagaida

The selection of appropriate non-inpatient casemix classification systems is pivotal to the overall success of casemix in Australia. Before implementation, an extensive review and evaluation of issues relating to non-inpatient casemix must be undertaken in conjunction with inpatient casemix to avoid adverse economic and clinical outcomes. Here, we review the background to and current status of non-inpatient casemix classification systems. The current Commonwealth/State research agenda is defined and possible options for both classification and funding of non-inpatient services are described.

(Med J Aust 1994; 161: S30-S33)

At present, Australian hospitals provide an estimated 40 million occasions of services to ambulatory or non-inpatients each year. These services cost more than \$3.2 billion dollars and consume 20%–30% of public hospital budgets compared with an estimated 40% spent on acute inpatient care.

Based on the American experience, it is expected that the present trend towards ambulatory care will increase after the introduction of casemix funding for inpatient services. Many clinicians and managers believe that not introducing casemix simultaneously for both inpatients and non-inpatients will have a substantial and negative impact on patient care.

The American experience does not offer an obvious solution to these problems. No ambulatory casemix system has received widespread acceptance. Many are similar to the Commonwealth Medicare Benefits Schedule and are designed for office practice and same-day procedures rather than hospital-based emergency and ambulatory services. Thus they are not directly applicable to Australia.

There has been little research into the type and extent of ambulatory services in Australia, but in recognition of the importance of such services provided by Australian public hospitals a detailed analysis has been initiated.

Here, we review the background to and the current status of non-inpatient casemix classification systems and conclude by describing possible options for both classification and funding of these services.

Emergency medicine and ambulatory care

The American experience

Most of the original work on ambulatory casemix systems was done in the United States after the introduction of the prospective payment system in 1993. The proportion of hospital budgets spent on ambulatory care increased from 13% in 1982 to 20% in 1988.¹ Health services managers concentrated on outpatient clinics in an attempt to understand and control this phenomenon. The development of various ambulatory classification systems such as ambulatory visit groups and ambulatory patient groups followed and attempts were made to extend the ambulatory visit groups system to cover all non-inpatients. These met with little success, particularly in emergency departments.

The use of the term "ambulatory" to describe all non-inpatient activity is historical and has led to the mistaken belief that all non-inpatient care is ambulatory.

The Australian experience

In Australia, it is more appropriate to use "non-inpatient" rather than "ambulatory" because of the heterogeneous clinical environments in which care is provided. Non-inpatient care is provided by outpatient clinics, emergency departments and specialist units such as those providing same-day procedures, outreach services (hospital-based services provided at an external location) and substitution services (services which can be directly substituted for inpatient care but which are delivered in a non-inpatient environment, e.g., "hospitals in the home").

Because of the structure of institutional health care, the contribution of outpatient care to overall costs is higher in Australia than in the United States and is estimated to be 20%–30%.² Although the individual cost of ambulatory visits is low compared with inpatient costs, the variability of costs is higher. Some ambulatory visit groups cost 50 times as much as others.³ Baraff reported a 40-fold difference between the least and the most expensive case groups in emergency departments.⁴

Ideally, a casemix classification system should be resource homogeneous, clinically meaningful and contain an adequate number of classes. Any classification system should also be

Department of Emergency Medicine and Ambulatory Care, Royal Brisbane Hospital, Herston Road, Herston, QLD 4029.

Michael I Cleary, MHA, FACEM, AFACHSE, CHE, Queensland Representative, Australian Casemix Clinical Committee.

Richard H Ashby, BHA, FACEM, FRACGP, FRACMA, President, Australasian College for Emergency Medicine.

George A Jelinek, FACEM, Emergency Physician, Department of Emergency Medicine, Fremantle Hospital, Fremantle, WA.

Robert Lagaida, BEc, MComm, Health Policy Division, New South Wales Health Department.

No reprints will be available. Correspondence: Dr M I Cleary.

supported by clinical practice and be consistent with the requirements of clinicians for clinical budgeting and devolution of authority.⁵

The need for separate classification systems within non-inpatient care

Research by Lion et al.³ and others⁴ supports the need for separate casemix classification systems for emergency departments and outpatient clinics. Lion et al. concluded that emergency departments were delivering the "illness" component of ambulatory care as opposed to the "wellness" component in outpatient clinics. These studies suggest that in the United States hospital outpatient clinics and office-based private practices have a similar casemix, which is different to the casemix of emergency departments. It is likely that the situation in Australia is similar. Recent studies by Jelinek⁶ and Coleridge et al.⁷ demonstrated major differences in the caseload of Australian emergency departments and outpatient clinics, which has been confirmed by the National Ambulatory Casemix Project.⁴ Hence a single casemix system would not be suitable.

Some Australian studies have analysed resource use in emergency and outpatient clinics. These demonstrated that diagnosis and procedures performed were the key determinants of cost in outpatient clinics,² while urgency and disposition were the most important determinants of cost in emergency departments.⁸ Clearly, data requirements and coding will be different in the two settings.

Emergency medicine

Almost half of all Australian public hospital admissions originate from emergency departments. This, coupled with the increasing focus on appropriate bed use, means that it is essential to avoid any incentive to over-admit. There is a risk that this gatekeeping function of emergency departments may be lost if an episode-of-care model is adopted.⁹ This model proposes that emergency departments be funded by two different casemix systems, including a fraction of the Australian national diagnosis-related groups reimbursement for each admitted patient, and an ambulatory casemix payment for non-admitted patients. Because many acutely ill patients may be managed in either an inpatient or ambulatory environment, the decision to admit or discharge may then be based not on clinical need but on whether the diagnosis-related group (DRG) fraction or the ambulatory casemix payment is greater.

Emergency departments are functionally separated from other non-inpatient services by the urgency with which patients need to be seen. Jelinek⁶ has shown that five urgency groups based on a standardised triage scale correlated highly with resource use and therefore with cost. Urgency groupings accounted for 28.9% of the cost variance at three Perth teaching hospital emergency departments. Disposition (whether the patient was admitted, discharged, transferred

or died) accounted for 26.8% of cost variance. In contrast to this, the 26 major diagnostic groups accounted for only 17.3% of cost variance.

Jelinek developed urgency-related groups, a system which classifies all patients presenting to emergency departments into 73 classes (38 classes of admitted patients and 35 classes of non-admitted patients).⁶ The classification is based on an urgency classification, patient disposition and diagnosis (Box 1). The urgency classification is based on the National Triage Scale developed by the Australasian College for Emergency Medicine which has been implemented in most Australian emergency departments.¹⁰ Urgency-related groups have substantial advantages over other classification systems (Box 2).

Ambulatory care

Three Australian studies have examined hospital-based ambulatory care. The National Ambulatory Casemix Project developed a simple classification called the Australian Ambulatory Classification⁴ which contained 121 classes. Diagnosis and procedure coding are not required, the system demands minimal additional administrative effort and can be easily and rapidly implemented at the hospital level. The system uses variables which are susceptible to manipulation and would require modification to become viable for outpatient services in the current health care environment.

The Ambulatory Encounters Study conducted at Flinders Medical Centre (Adelaide) and the Ambulatory Casemix Project conducted at the Royal Children's Hospital (Melbourne) examined the need for a detailed classification system which was driven by routinely collected and coded

1: Urgency-related groups

Urgency	Triage code: National Triage Scale
Disposition	Disposition code: admitted, discharged, transferred or died
Diagnosis	Diagnosis code: diagnosis grouping

2: Advantages of urgency-related groups

- Simple
- Relatively inexpensive
- Compatible with all coding systems
- Relates to other indicators (for example, quality assurance, utilisation review, performance indicators)
- Describes all emergency department attendances
- Resource homogeneous and clinically coherent

data. The Melbourne study focused on specialist medical and surgical outpatient clinics. It did not consider clinical services provided by the emergency department. The study suggests that:

- There is little potential for the use of ambulatory visit groups or ambulatory patient groups to classify ambulatory services in Australia because of the difficulty of collecting information about diagnosis;
- Normal consultation services should be classified according to "first/review attendance" and "type of clinician";
- There should be separate funding arrangements for patients attending specialist clinics.

The Flinders Medical Centre study is likely to confirm the point about ambulatory patient groups and ambulatory visit groups. The latter appear to be more suited for ambulatory classification but would require modification, particularly for procedural services.

Future directions

In 1991 the National Health Strategy identified the inefficiencies in the overlap of responsibility for non-inpatient care between the States, Territories and the Commonwealth, creating the potential for duplication, poor coordination and cost shifting.¹¹ Reforms were recommended, including a change in the funding arrangements for non-inpatient services.

The ambulatory care research and pilot program

The 1993 Medicare Agreement included specific references to ambulatory care and provided the platform for further research.¹² The subsequent National Health Summit (April 1993) and the Australian Health Ministers' Conference (July 1993) endorsed a two-year research and development program to construct a framework for the organisation, delivery and funding of hospital-related non-inpatient services. This culminated in late 1993 with the Commonwealth establishing the Ambulatory Care Research and Pilot Program. This Program is responsible for research to support policy development.

Framework for further research and development

The priorities for research and development are the design, evaluation and implementation of a non-inpatient casemix classification system. This will include the development of national minimal standards for terminology, minimum data sets for non-inpatient services, an information technology assessment as well as the development and validation of non-inpatient casemix classification and funding systems.

The project has been constrained because the information is inconsistent: different States use different methods to measure the volume of non-inpatient services and the use of

manual recording systems has led to a paucity of usable data. Specific pilot projects need to be conducted and are already under way in Victoria. These will allow a detailed analysis of non-inpatient services. Currently, the pilot studies are blind-billing the Commonwealth for selected non-inpatient services using the Commonwealth Medicare Benefits Schedule. This will provide information about patterns of care, patient profiles and resource use.

Categorisation for funding

The episode-of-care model proposed by Duckett and Jackson identifies non-inpatient services that are related to identifiable inpatient episodes and counts them as such for the purpose of reimbursement.⁹ To implement this payment model, each non-inpatient attendance must be classified and coded.¹³ The episode of care for a patient attending with uncomplicated appendicitis would therefore include an emergency department attendance, acute inpatient care and outpatient attendance.

Other non-inpatient services which are unrelated to inpatient episodes would be funded separately. It has been suggested that attendances which could be substituted by general practitioner or specialist care could be funded by the Commonwealth Medicare Benefits Schedule. However, this schedule is a payments system rather than a cost-based system and, as such, would require modification if it were to be used in the public sector.

Whatever funding model is adopted, it is necessary to safeguard teaching and research, and create incentives to optimise practice and minimise cost shifting.

Conclusion

The importance of non-inpatient care provided by Australian public hospitals is being recognised. Under the terms of the Medicare Agreement, and as a result of subsequent decisions made at the National Health Summit (April 1993) and the Australian Health Ministers' Advisory Council (July 1993), the States and Territories will work with the Commonwealth to clarify responsibilities, funding arrangements, classification and cost of non-inpatient services in hospitals.

The proposed ambulatory care reforms should aim to ensure that there are incentives to encourage the most appropriate care in the most appropriate location. The research being undertaken as part of the Ambulatory Care Research and Pilot Program will allow analysis of the patterns of non-inpatient care, establish typical episodes of hospital care and, where possible, bundle payments for them.

It seems unlikely that an Australian standard for non-inpatient casemix will emerge in the immediate future but it is clear that a single casemix system will not be suitable for use in all non-inpatient services. However, progress is being made and appropriate non-inpatient classification systems should be developed before 1997.

Acknowledgement

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Making casemix work for psychiatry

David I Ben-Tovim and Rob H Elzinga

Providers of mental health and substance abuse care cannot afford to ignore the existence of casemix descriptions of their services. As casemix comes to be the predominant language used to describe the products of hospital care, its use will inevitably impinge upon psychiatric services. The psychiatric components of the Australian national diagnosis-related groups classification 1 and 2 (AN-DRG 1 and 2) do not describe the relevant products with great accuracy. We review some possible reasons for this and the effects on the homogeneity of resource consumption of technical procedures, such as trimming of data sets, in the context of the current casemix system and that proposed for AN-DRG-3. The evolution of a casemix system which does justice to current and future psychiatric services will be a complex process. Some of the crucial areas are discussed. Clinicians involved in mental health and substance abuse care must continue to advocate for the resources and effort needed to improve casemix information in their area.

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Casemix is best thought of as a language whose terms integrate the clinical and financial aspects of health care, and it is increasingly the language in use in the management of Australian health care. Psychiatric services

are an important part of our health system, so casemix must impinge upon the delivery of mental health and substance abuse care. In that context, the practical issues for psychiatric services are not the usefulness of casemix *per se* or the theoretical usefulness of a casemix language for psychiatry. They are: what are the consequences of psychiatric services being described in a language which is different from that used elsewhere in the health system; is the present form of the casemix language at all comprehensible when applied to mental health care products; what would be the impact if existing psychiatric casemix dialects came into widespread use; how might the language be developed; and how can clinicians learn it?

No issues in the field of health care exist in isolation. Psychiatric services are undergoing a painful period of transformation. Under the watchful gaze of a National Mental Health Policy, services that were once confined to isolated psychiatric hospitals are gradually moving into the community and into the general health care environment.^{1,2} The process of change is not easy, and many mental health professionals are uncomfortable about the emergence of issues such as casemix, which they see as extraneous to the principal agenda of mental health care reform. They are critical of casemix, not for what it can do, but for what it can not.

Casemix and psychiatric services

The language of casemix in current use in Australia is concerned with describing care products that are resource homogeneous, that is, which cost the same to produce.³ Length of hospital stay is often used as a surrogate for absolute measures of cost or resource consumption. A casemix which describes homogeneous groupings of

Department of Psychiatry, Repatriation General Hospital, Daws Road, Daw Park, SA 5154.

David I Ben-Tovim, PhD, FRANZCP, Associate Professor and Director.

South Australian Mental Health Services, Adelaide.

Rob H Elzinga, PhD, Chief Clinical Psychologist.

No reprints will be available. Correspondence: Professor D Ben-Tovim.

Outpatient costing and classification: are we any closer to a national standard for ambulatory classification systems?

Michael I Cleary, Jo M Murray, Robin Michael and Kym Piper

The Casemix Development Program which commenced in Australia in July 1988 focused on developing and implementing a national inpatient classification system for acute patients (AN-DRGs). Relatively little work was done on classifying and costing ambulatory services. In the early 1990s, however, two projects were conducted — the National Ambulatory Casemix Project in Sydney¹ and the Flinders Medical Centre Ambulatory Encounters Project in Adelaide,² the latter in conjunction with the Royal Children's Hospital in Melbourne. These were primarily "demonstration" projects, which tested some overseas classifications and identified issues for future ambulatory classification projects.

In 1994, the National Ambulatory Care Reform Program focused attention on ambulatory services by funding studies to facilitate health policy development in this area.³ However, none of these projects addressed the need for a nationally consistent ambulatory classification system.

Recognising this, the Department of Health and Family Services requested that the Australian Casemix Clinical Committee establish a subcommittee to oversee the development of an ambulatory classification system for use in Australia. This committee reviewed existing classifications for their applicability in Australia,⁴ concluded that none were appropriate and recommended that a new classification system be developed to complement other patient-based classification systems.

This work resulted in the Developmental Ambulatory Classification System (DACS), which was patient-based and structured around Ambulatory Major Diagnostic Categories (AMDC), similar to the Major Diagnostic Categories of the AN-DRG classification. The major splits in the proposed classification were based on whether the patient was making a new or a repeat visit, and whether a significant

Synopsis

- The Outpatient Costing and Classification Study was commissioned by the Department of Health and Family Services to evaluate the suitability of the Developmental Ambulatory Classification System (DACS).
- Data on the full range of ambulatory services (outpatient clinics, emergency departments and allied health services) were collected prospectively from a stratified sample of 28 public hospitals. Patient encounters captured in the study represent 1% of the total ambulatory encounters in Australia in one year.
- Costing per encounter included time spent with the patient, cost of procedures, indirect costs (salaries and consumables), overhead costs and diagnostic costs.
- The most significant variable explaining cost variation was hospital type, followed by outpatient clinic type. Visit type and presence or absence of a procedure — major splits for the proposed DACS — did not produce splits that were consistent across all hospital strata.
- The study found that DACS is not an appropriate classification for hospital ambulatory services.
- A clinic-based structure for outpatients and allied health departments is recommended for classifying and funding ambulatory services in Australia.

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Princess Alexandra Hospital, Brisbane, QLD.

Michael I Cleary, FACEM, MHA, Executive Director of Medical Services.

Department of Health and Family Services, Canberra, ACT.

Jo M Murray, BSc(Med), Acting Assistant Secretary, Classification and Payments Branch.

Deloitte Touche Tohmatsu Consulting Group, Sydney, NSW.

Robin Michael, BSc(Hons), MPH, Partner.

South Australian Department of Human Services, Adelaide, SA.

Kym Piper, MNIA, Principal Consultant, Health Costing and Evaluation Unit.

Reprints will not be available from the authors. Correspondence:

Dr M I Cleary, Executive Director of Medical Services,

Princess Alexandra Hospital, Woolloongabba, QLD 4102.

E-mail: clearym@health.qld.gov.au

procedure was performed (Box 1). A specially constructed expert panel identified which outpatient and emergency procedures were significant cost drivers. In contrast to the other major classification systems, this classification was not based on empirical data. DACS needed to be evaluated for its suitability as a national classification.

To address this issue an Outpatient Costing and Classification Study was commissioned by the Commonwealth Department of Health and Family Services in 1997.

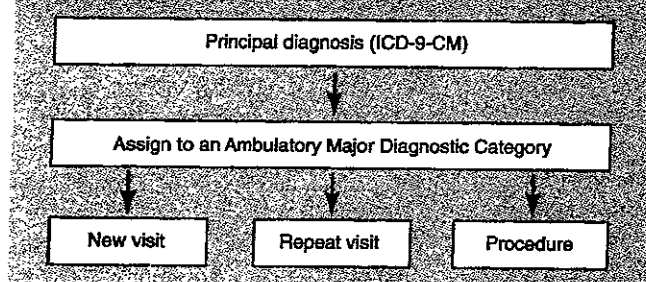
Methods

The Outpatient Costing and Classification Study was conducted in two phases.

Phase 1: Selecting and defining the data elements to be captured during the study and developing a sampling framework (conducted by Deloitte Touche Tohmatsu).⁵

Phase 2: Data capture and analysis of the results (con-

1: Developmental Ambulatory Classification System (DACS)



ducted by Coopers & Lybrand and the South Australian Health Commission).⁶

The study aimed to include the full range of ambulatory services provided in public hospitals. For the purpose of the study, the term "ambulatory service" encompassed designated outpatient clinics (irrespective of location), emergency departments and allied health services for non-admitted patients. Because hospitals' recording of patient activity varies, the study also included same-day patients and inpatients treated within the outpatient and emergency departments.

Hospitals

Data were collected prospectively from a stratified sample of Australian public hospitals. South Australian hospitals were over-represented, because a similar State-based research project was initiated in South Australia before the Commonwealth project. Twenty-eight hospitals participated in the study. They included eight teaching hospitals, two specialist hospitals, two metropolitan hospitals, seven large rural hospitals and nine small rural hospitals (Box 2).

Data collection

Senior staff from each hospital met with the consultants before study commencement to ensure optimal data collection, and all hospitals employed a project officer to facilitate on-site coordination. To ensure data accuracy, a quality management plan was developed, including tolerance reports and edit checks on the data.

Data collection commenced in September 1997 and continued in SA hospitals for three months, and at other sites for one month. Because of the difficulty in collecting detailed patient data in busy emergency departments, the collection period in emergency departments was four weeks in South Australia and two weeks in other States.

Detailed utilisation data were obtained for each patient in the study (Box 3).

A patient encounter was defined as "an interchange between one or more healthcare providers and one or more patients, for assessment, consultation and/or treatment for intended unbroken period of time".

Telehealth consultations (including videoconferencing, telemedicine and telephone contacts) were included if the clinician who had previously seen the patient was present,

2: Participating hospitals

Hospital name	State	Patient encounters	Hospital type
Lyell McEwin	SA	21 000	Teaching
Repatriation	SA	19 300	Metropolitan
Royal Adelaide	SA	20 000	Teaching
Queen Elizabeth	SA	35 200	Teaching
Women's and Children's	SA	33 170	Specialist
Clara	SA	1 121	Small rural
Cooper-Peddy	SA	701	Small rural
Crystal Brook	SA	1 002	Small rural
Kapunda	SA	1 400	Small rural
Murray Bridge	SA	1 800	Small rural
Port Pirie	SA	11 000	Large rural
Quorn	SA	400	Small rural
Flowerd Regional	SA	2 200	Small rural
Timber Bay	SA	1 300	Small rural
Whyalla	SA	8 800	Large rural
Box Hill	Vic	4 000	Metropolitan
Bendigo Health Care Group	Vic	5 171	Large rural
Warragamba District	Vic	1 515	Large rural
St Charles Gardner	WA	18 719	Teaching
Gosford District	NZ	1 000	Small rural
The Canberra	ACT	8 000	Teaching
Bundaberg Base	QLD	5 770	Large rural
Rockhampton Base	QLD	5 300	Large rural
Princess Margaret	Tas	10 000	Teaching
St George	NSW	10 451	Teaching
Barkham's/Lidcombe	NSW	1 430	Teaching
New Children's	NSW	10 000	Specialist
Lismore Base	NSW	2 012	Large rural
		Total	246 000

and when the service was considered to be a substitute for face-to-face contact.

Radiology and pathology services and dispensed pharmaceuticals were not considered encounters in their own right, but were subsequently linked to the "primary" encounter (ie, the encounter in which the services were ordered).

Reviewing results, dictating letters and making telephone calls, which are generally consistent across all encounters, were included as indirect costs (although some clinicians elected to record the time associated with these activities as direct patient contact time).

Telephone calls were recorded if the clinician who had previously seen the patient was present and when the service was considered to be a substitute for face-to-face contact.

Indirect encounters related to consultations with key providers and relatives of patients in which the patient was the focus of the encounter.

Group encounters were defined as encounters with more than one patient and/or more than one practising clinician present.

All hospital-paid staff who were involved in providing patient care were requested to record the amount of time they spent in direct patient contact. This has been previously reported as the most variable aspect of an outpatient encounter.¹ Specific proformas were developed to collect details on nursing time, medical time, allied health time, diagnostic services (pathology and imaging) and therapeutic services (pharmaceuticals).

Coding

Accurate diagnosis and procedure coding are not routinely collected for ambulatory patients in Australia. ICD-9-CM classification to the three-digit level was adopted as the minimum standard for coding during the project. This did not reduce the specificity of the clinical data, with some 4364 different codes being used across the study. Coding to the fourth and fifth digit was permissible if desired by clinicians.

Standardising the clinic profile

A set of generic outpatient clinics had to be established to standardise the profile of outpatient clinics within Australian hospitals. The use of outpatient clinics as a classification variable had been supported by several ambulatory studies, including the Victorian Ambulatory Classification System,⁷ the Queensland Health Ambulatory Project,⁸ and the Flinders Medical Centre Ambulatory Encounters Project.² From these sources a list of 76 generic clinics was identified.

Data collection sites were requested to map their clinics to this list. Some hospitals had difficulty in mapping their very specialised clinics. In these situations additional clinic names were added. With these refinements a final generic clinic list comprising 78 clinics was obtained.

Costing data

Patient level cost data were used to determine the cost of each encounter in four steps:

Direct costs: The cost of direct time spent with a patient and the cost of significant procedures for individual encounters were allocated to the specific encounter.

Indirect costs: Salary costs and costs for consumables (derived by deducting direct cost from total expenditure reported in line items in ambulatory cost centres) were dispersed across all ambulatory encounters.

Overhead costs: Overhead costs, determined by an approach similar to that employed in COSMOS,⁹ were dispersed across all ambulatory encounters. This process allows all costs incurred in providing services — power, cleaning and infrastructure costs as well as direct costs — to be allocated to an individual encounter.

Diagnostic costs: Patient specific utilisation data relating to radiology, pathology and pharmacy were downloaded from hospitals' information systems. Standardised unit prices were adopted for radiology and pathology services. This was

2. Data data collected

Before date	Encounter date
Principal Identifier	Encounter reason
Referral identifier	Referral identifier
Sex	Pharmacy services
Place of birth	Pharmacy identifier
Age (months)	Start time (hours, minutes)
Date of arrival	All direct referrals
Chaperone	Contraindications
Encounter date	
Full name (first or initials)	
Contact type (direct, indirect, telehealth)	
Registration code (ICD-10-CM)	
Procedure code (ICD-10-PCS)	
Referral type (telehealth, home care or hybrid)	
Referral source (e.g., "Referral from Department of Medicine - Allergy")	
Referral source	
Planned attendance	
Followed in operating room procedure	
Surfactant support	
Referral status	
Non-English speaking patient (language required)	
Discharge diagnosis (only)	
Number of patients present	
Number of children present	
Language (discharge only)	

1. 1990年1月1日以前

State	Emergency	Alcohol Deaths	Emergency	Total
British Columbia	106,810	37,704	21,044	165,558
Alberta	82,561	18,901	14,000	115,462
Manitoba	7,044	4,347	802	12,193
Saskatchewan	63,311	12,400	7,777	83,488
Ontario	51,100	7,500	7,300	65,900
Quebec	71,100	2,762	1,000	74,862
New Brunswick	18,004	2,100	1,000	21,104
Total	407,930	96,714	36,923	541,567

set at 85% of the Medical Benefits Schedule (MBS) fee. Pharmacy costs were directly allocated and included Section 100 drugs. These costs were directly allocated to the primary ambulatory encounter.

Most hospitals in the study were able to provide detailed costing information, with the exceptions being some of the small hospitals in South Australia. To estimate outpatient cost in these hospitals, a proxy outpatient fraction was derived from information obtained during the National Hospital Cost Data Collection Study.

5: Costs of providing services by clinic type (specialist outpatient and allied health)

Adolescent health	\$280.87	Genetics	\$207.88	Paediatric developmental	\$282.04
Allergy	\$125.87	Gynaecology	\$205.23	Paediatric surgery	\$189.81
Asthma	\$158.02	Immunological oncology	\$188.45	Pain	\$142.86
Audiology	\$85.71	Haematology	\$204.01	Paediatric care	\$43.39
Behavioural medicine	\$128.40	Infectious disease	\$204.01	Paediatric surgery	\$11.01
Bone marrow transplant	\$446.70	IBD	\$207.88	Paediatric surgery	\$26.26
Breast	\$208.27	Immunological oncology	\$207.88	Paediatric	\$26.26
Burns	\$176.87	Infectious disease	\$207.88	Paediatric	\$117.88
Cardiac	\$165.84	Infectious disease	\$207.88	Paediatric	\$162.34
Cardiac surgery	\$188.82	Infectious disease	\$207.88	Paediatric	\$162.34
Colonial	\$84.03	Liver transplant	\$207.88	Paediatric	\$162.34
Child protection unit	\$26.44	Metabolic disease	\$207.88	Paediatric	\$162.34
Cardiology	\$140.47	Nephrology	\$207.88	Paediatric	\$162.34
Dental	\$110.85	Nephrology	\$207.88	Paediatric	\$162.34
Dermatology	\$87.85	Nephrology	\$207.88	Paediatric	\$162.34
Diabetes	\$82.80	Nephrology	\$207.88	Paediatric	\$162.34
Diabetes education	\$82.80	Nephrology	\$207.88	Paediatric	\$162.34
Diagnostic services	\$82.80	Nephrology	\$207.88	Paediatric	\$162.34
Ear nose throat	\$82.80	Nephrology	\$207.88	Paediatric	\$162.34
Eating disorders	\$82.80	Nephrology	\$207.88	Paediatric	\$162.34
Endocrinology	\$110.25	Nephrology	\$207.88	Paediatric	\$162.34
Family planning	\$82.80	Nephrology	\$207.88	Paediatric	\$162.34
Fracture	\$82.80	Nephrology	\$207.88	Paediatric	\$162.34
Gastroenterology	\$124.00	Nephrology	\$207.88	Paediatric	\$162.34
General medicine	\$115.79	Nephrology	\$207.88	Paediatric	\$162.34
General surgery	\$112.87	Nephrology	\$207.88	Paediatric	\$162.34

Statistical analyses

Statistical analysis of the data measured the significance of the associations between the independent variables and the dependent variable, which in this case was cost.

Results

The study collected clinical and demographic data on 248 608 patient encounters (Box 4). Additional data were incorporated into the database: two previous emergency department studies (the Flinders Medical Centre Emergency Department Study¹⁰, and the Women's and Children's Emergency Department Study¹¹); the Mental Health Classification and Service Costing Project (MH-CASC) relating to ambulatory encounters in the Mental Health Division of the Women's and Children's Hospital;¹² and data from Launceston and Burnie Hospitals in Tasmania.

The patient encounters captured in the study represent about 1% of the total hospital ambulatory encounters in Australia each year.¹⁰ Over 82% of these encounters were referred from three sources: other services within the hospital (33%); community general practitioners (28%) and self-referral (22%). The high proportion of self-referred patients was due to the inclusion of emergency department data. Thirty-four per cent of all encounters were new visits. The average cost of a new visit was \$128, and of a repeat visit, \$110.

There were 10% more female than male patient encounters

in the study population, and the number of public patient encounters greatly exceeded other types (86.6% of patients were public, 7.6% private, and 5.7% Department of Veterans' Affairs).

Of the patient encounters analysed, 95% were direct encounters, 3.5% were telephone encounters and 1.5% were indirect contacts. The average cost for these encounters was \$116 (direct), \$129 (indirect), \$115 (telephone) and \$152 (telemedicine), respectively.

There were only 46 telemedicine encounters captured during the study period. This represented 0.02% of total encounters.

The costs of providing services to patients in hospital outpatient departments and in the ambulatory service components of hospital allied health departments are given in Box 5. This clinic structure was standardised for all hospitals.

Group encounters were partitioned on the basis of hospital type and clinic type in the same manner as one-to-one encounters to facilitate standardised approaches to data collection and reporting. After trimming data to remove outliers, 0.5% of clinic encounters were group encounters. The average per patient cost of a "group encounter" was \$82. This was about \$20 less than one-to-one encounters. A list of group encounters and costs is given in Box 6.

Emergency department analysis incorporating data from two previous studies (as mentioned above), and other studies conducted in Australia, have identified the key

resource drivers in an emergency department as being triage, disposition and age.¹

Classification analysis

The objective was to design, from first principles, an outpatient classification system which could be used to fund ambulatory activity, and in doing so report on the appropriateness of the DACS as a framework for a patient-based classification system.

A total of 198 495 episodes were analysed in detail, after removal of incomplete episodes. For selected components, data were trimmed to exclude cost outliers (defined as <4 or >5 SD from the mean); 1008 records were excluded on this basis. Analysis of emergency department data was conducted separately.

The most significant variables identified were hospital type (teaching, specialist, metropolitan, large rural and small rural), outpatient clinic type, visit type (new or repeat), age and significant procedure. The impact of hospital type was highly significant and became the principal variable producing splits. An analysis of secondary variables producing splits is given in Box 7.

Clinic-based classification

Clinic type explained 24.05% of the cost variation in untrimmed data, and 31.60% of the cost variation in trimmed data. The variation explained was less significant for teaching hospitals (18.04% for untrimmed data and 23.93% for trimmed data). The variation in teaching hospital costs may have been a consequence of the higher number of junior staff who may have ordered additional diagnostic tests and the variable profile of clinicians attending the same patient.

A detailed review was conducted of the variables associated at the next level of the classification tree, testing, in particular, age, visit type and the presence or absence of a significant procedure. This analysis did not produce splits which were consistent across all hospital strata. These factors were not considered to be significant splitting variables.

To complete the classification analysis, it was necessary to examine group encounters and telephone contacts. Difficulty in defining telephone calls for funding purposes has resulted in telephone calls being excluded in many casemix-funding models. As the cost differential between face-to-face contacts and telephone contacts is so small, a case could be made for recommending funding these services in the same manner as face-to-face contacts. However, concerns were raised about the gaming potential for this class of encounters.

Emergency department system

When analysing emergency department episodes on the basis of urgency (as assessed by the National Triage Scale) and

Box 7. Cost of services provided to patients attending group encounters

Group encounters	Cost/patient attending
Cardiac	\$100.50
Diabetes education	\$120.13
Family medicine	\$94.58
Haemiparesis	\$100.00
Obstetrics	\$111.87
Occupational therapy	\$90.00
Paediatric development	\$99.75
Pain	\$201.20
Physiotherapy	\$60.30
Physiotherapy	\$120.50
Psychiatric	\$110.00
Psychology	\$60.00
Respiratory	\$17.00
Rheumatology	\$23.40
Social work	\$90.50

disposition, a significant explanation of variance was obtained. This remained at 34.39% for both trimmed and untrimmed data. Box 8 details the proportion and cost of encounters, by triage, disposition and age.

The performance of this classification structure in small rural hospitals was extremely poor and produced a 0.93% reduction in variance. The flat average cost across the range of classes within this hospital stratum suggests that these services should be funded at a standard rate.

DACS structure

The assignment to DACS classes was based on the principal diagnosis coded, using ICD-9-CM codes. Problems occurred in the assignment of patients to DACS classes because there was no unique mapping of ICD-9 CM codes to AMDCs. For example "fracture of facial bones" could be assigned to AMDC 2, 3 or 8

(Eye; Ear, Nose, Mouth and Throat; and Musculoskeletal System and Connective Tissue, respectively). This was not addressed during the design phase of the project, and to resolve this an additional step was incorporated into the grouping process. This step used "clinic type" as a defining variable. This allowed 80% of all encounters to be assigned to a specific DACS class. It is not possible to determine whether the 20% of episodes excluded from the analysis had a significant impact on the result.

The DACS explained only 15.32% of cost variation when stratified by hospital type. The performance of this classification system was marginally improved when a secondary split based on professional discipline (allied health, emergency, outpatient) was included (20.12%).

Discussion

It is imperative to establish a standard classification system for ambulatory patients, as has been done for acute patients. Healthcare funders and providers need to be able to describe the ambulatory patient profile.

Previous studies attempting to explain the resource variation for ambulatory patients have found that classifications based on the provider, rather than the patient, explain greater variation in patient costs. This is to be expected, as ambulatory care takes place in a relatively constrained environment. Clinicians designate "time slots" for their patients based on criteria relevant to their specialty areas. Patients may also be seen for the same condition by medical specialists and by allied health professionals — the characteristics of the patient are unchanged, but the treatment regimens and resource use by the provider can vary greatly.

Nevertheless, despite the difficulties entailed in development, a patient-based classification is considered the ideal

7: Variables analysed in assessing cost drivers for outpatient and emergency services

Variable	Variance explained	F statistic	Episodes
Clinic (untrimmed)*	24.05%	253.06	186 495
Clinic (trimmed)	31.60%	387.30	187 487
Visit type (untrimmed)	24.93%	141.00	198 428
Clinic and age (untrimmed)	24.54%	115.80	198 171
Clinic and procedure (untrimmed)	24.25%	210.01	198 418
DACS	15.32%	121.55	186 993
DACS and discipline	20.12%	89.05	184 891
Emergency (untrimmed)	34.39%	558.81	55 500
Emergency (trimmed)	34.39%	558.81	55 492

Untrimmed data includes high cost outliers.

DACS = Developmental Ambulatory Classification System.

8: Cost for emergency encounters

Disposition	Triage category	Cost
Admitted or transferred	Resuscitation	\$502.10
	Emergency	\$279.71
	Urgent	\$239.89
	Semi-Urgent	\$193.85
	Non-Urgent	\$126.78
Discharged home	Resuscitation	\$195.81
	Emergency	\$121.35
	Urgent	\$107.13
	Semi-Urgent	\$134.75
	Non-Urgent	\$69.63
Died	All categories	\$953.47

long term classification structure for ambulatory encounters, as it would truly reflect the clinical condition of patients and thus enhance the clinical utility of such a system. The DACS, developed with input from experienced clinicians, was designed with this intent but, before this type of classification can be introduced, hospital outpatient information systems will have to be greatly enhanced. A complex patient-based classification requires the collection of patient activity and clinical data, which would exceed the capacity of existing manual or electronic systems.

The study clearly indicates that the proposed DACS, in its current form, is not appropriate for classifying hospital based ambulatory services, and that in future classification development work the AMDC structure should not be considered an appropriate primary classification variable.

More importantly the study identifies the generic clinic classification structure, partitioned by hospital type, as the most appropriate classification system for one-to-one encounters in outpatient clinics and allied health departments. Group encounters should also be classified by generic clinic type. Separate cost weights would apply to one-to-one and group encounters.

The classification of emergency department presentations has been the subject of extensive research. This project confirms previous reports that triage category and patient disposition should be used to classify one-to-one encounters in emergency departments.⁹

In the short term, the generic clinic based structure for outpatients and allied health departments and the urgency and disposition based structure for emergency departments are recommended for classifying and funding ambulatory services in Australia.

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Getting Clinicians Involved: The Australian Experience

MI Cleary,* MBBS (Qld), FACEM, MHA (UNSW)

Abstract

This paper explores the clinical changes that occurred following the introduction of casemix in Australia and more importantly how casemix classification systems and methodologies were influenced by clinicians. It highlights some of the important milestones, major events and key processes that were associated with the diffusion of Diagnosis Related Groups.

Clinical leadership was critical. This was achieved through the combined activities of clinicians working through various national committees and organisations including the Australian Casemix Clinical Committee, the National Centre for Classification in Health, the various Commonwealth and State health departments and the respective specialist colleges and associations. These combined activities delivered a clinically meaningful, state-of-the-art casemix classification underpinned by a coding and data collection system that is both sophisticated in terms of its ability to meet the needs of practicing clinicians as well as being technologically advanced.

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Introduction

Casemix both for classification and payment purposes is now well established as a valuable tool for improving and managing Australia's health care system.¹ It was launched in 1988 when it was included in the national health care agenda as part of the Medicare Agreements (the joint Commonwealth State agreements relating to health care management and funding). It is now increasingly being used for resource allocation where it is being employed to deliver improvements in both technical efficiency and allocative efficiency; output measurement; quality enhancement; comparative analyses; and the monitoring of changes in service delivery.

Diagnosis Related Groups or DRGs are the best-known casemix classification. This particular classification describes patients who are admitted to hospital, and provides a valid mechanism of relating clinical care to the resources required to provide that care. In Australia, DRGs have become and remained relevant to clinical practice because they have been continuously revised in line with changes to medical and surgical practice and coding procedures. Significant changes occurred in 1992 and 1996, when Australian National Diagnosis Related Groups (AN-DRGs) were revised. Major changes to the classification also occurred in 1998 when AN-DRGs were replaced by the Australian Refined Diagnosis Related Groups (AR-DRGs)

and in 1999 when the AR-DRGs version which utilised ICD-10-AM codes was released.

Simultaneously with the refinement of the DRG classification, a series of classifications have been developed that describe non-acute inpatient care and ambulatory care. These classifications include the Sub-Acute and Non-Acute Patient (SNAP) Classification, the ambulatory classification, and the Emergency Department classification.

All Australian States and Territories now use AR-DRGs, SNAP and the ambulatory and Emergency Department classification for the funding of public hospitals; while private health care organisations are using AR-DRGs to fund private inpatient care.

The Australian Casemix Clinical Committee (ACCC) sponsored these developments. This committee together with the National Centre for Classification in Health (NCCCH) have provided the key drivers for casemix and its clinical acceptance in Australia.

Australian Casemix Clinical Committee

The ACCC was established in 1990 to coordinate the clinical evaluation of DRGs and to assess the impact of casemix in a clinical environment. The ACCC is the peak committee that provides clinical advice on classification issues and other casemix matters to the Commonwealth Department of Health and Aged Care, and reports annually

* Executive Director of Medical Services
The Prince Charles Hospital
Chermside, Australia

Address for Reprints: Associate Professor MI Cleary, The Prince Charles Hospital, Rode Road, Chermside 4032, Australia.
E-mail: michael_cleary@health.qld.gov.au

to the Minister for Health and Aged Care on critical issues relating to casemix. In addition to the refinement of the classification systems, the Committee's Terms of Reference include liaison with clinicians, professional bodies, and State health instrumentalists and private sector organisations on casemix and related issues (Table I).

Members of the inaugural committee were appointed on the bases of their affiliations with State Health Departments and their memberships of the various specialist colleges. This arrangement provided an effective mechanism by which two-way communications between the various State Health Departments and specialist colleges occurred. Once

TABLE I: AUSTRALIAN CASEMIX CLINICAL COMMITTEE TERMS OF REFERENCE

1. To make recommendations to the Commonwealth Department of Health and Aged Care (CDHAC) on modifications to Australian casemix classifications (such as AN-DRGs). Such recommendations to be based on clinical evaluation following consideration by the clinical professions
2. To provide clinical input to and make recommendations to CDHAC concerning developmental work on new casemix classifications (such as ambulatory, sub-/non-acute and mental health classifications)
3. To provide the Minister of Health and Aged Care with an annual report of issues in the casemix area.
4. To provide feedback to clinical professions on Australian casemix classifications (such as the AN-DRG and ambulatory classifications) and the reasons for inclusion or exclusion of recommended changes or adoption of particular classifications or strategies
5. To advise CDHAC on the development and implementation of casemix measures in regard to quality of health care.
6. To receive reports, provide feedback and make clinical recommendations on other aspects of the Casemix Development Program Strategic Plan to CDHAC, and any other casemix committees as appropriate.
7. To provide critical input when differing clinical views arise and final clinical review of casemix issues to CDHAC.
8. To provide advice to CDHAC regarding the establishment and structure of ongoing subcommittees and the need to continue these subcommittees.
9. To monitor and advise its subcommittees on their work programs
10. To advise CDHAC about representatives of particular clinical specialties (eg. from the CCCGs or Colleges) who could act as advisers on matters of detail
11. To liaise with State/Territory casemix clinical committees, the National Centre for Classification in Health, the Australian Institute of Health and Welfare and the World Health Organisation.
12. To liaise with, and provide clinical advice on casemix matters to, State/Territory health authorities, public and private hospitals, hospitals' associations, the health insurance industry, and others as requested by the Commonwealth.
13. To undertake and advise CDHAC on clinical casemix education.

casemix was well established in each State, the committee membership was modified with members then being appointed on an individual basis rather than because of their affiliations with particular specialist colleges or organisations. This improved the level of specialist clinical input and facilitated the further refinement of the various casemix classifications.

The ACCC has oversighted the refinement of several versions of the Australian DRG classification (both AN-DRGs and AR-DRGs). It has also supported ongoing projects which focused on classification development in areas such as ambulatory care, sub-acute and non-acute care, expanded DRGs, indigenous health and mental health. This process was highly intuitive, involving a combination of statistical analysis and clinical evaluation. The selection of patient characteristics to be used in the classifications, the priority ordering of these characteristics and the analysis of the significance of the characteristics is a complex task. The end result of this systematic analysis was the development of a series of classification systems which were highly acceptable within the clinical community.

Specific Project Standing Committee's or a series of Clinical Classification and Coding Groups (CCCGs) provided expert clinical input into these developments. The later groups were very effective and ensured that appropriate clinical input at the Major Diagnostic Categories (MDCs) level was available when complex clinical issues were being considered. There were in excess of 130 clinicians directly involved in classification refinement through this process.

In addition to playing a pivotal role in the development of classification systems, the ACCC is also participated in the implementation of many Government policy initiatives including those relating to clinical budgeting, Aboriginal health, and health outcome measurement.

Leadership

Perhaps the most important role of the ACCC was to provide strong clinical leadership at a time of significant change. The changes which were implemented at a national level principally focused on improving the efficiency and effectiveness of health care delivery. Because of the utility of the casemix classification systems, they were frequently used to monitor the outcomes of change management processes and thus were seen as being at the core of the change process.

The leadership role taken on by the ACCC was achieved through the appointment of members who were highly regarded within the medical community and who had a detailed understanding of health funding within the broader health care environment. The Committee, once constituted, lead numerous initiatives by:

- establishing a strategic direction that was appropriate and achievable;
- setting specific goals in relation to the casemix development and implementation in Australia;
- working with all stakeholders to gain commitment to the specified goals;
- aggressively perusing the goals; and by
- celebrating success as well as recognising failures.

The goal setting process was critical to the overall success of the Committee. This was achieved through the use of a strategic planning framework, which was revised annually.

Consultation was undertaken along professional lines and utilised existing forums. Casemix presentations, for example, were incorporated into the programmes of scientific meetings for the specialist colleges. One of the more successful strategies that effectively provided opportunities to consult with the medical profession broadly was the publication of supplements in the Medical Journal of Australia in 1994 and 1998. These publications also had the effect of providing educational material to clinicians in a format that was well accepted.

The committee aggressively pursued the refinement of casemix classification systems. This was in contrast to similar programmes in the USA and UK where refinement of casemix classification systems at national level are not actively pursued. To achieve this, the committee supported cutting-edge research programmes to investigate the opportunities to improve the classifications in a broad range of areas. These types of initiatives resulted in a high level of clinician 'buy-in'. As a consequence of this activity, Australian casemix classifications are now recognised internationally as benchmark systems.

Clinical leadership was not confined to the medical profession but extended to all professional groups. For example, the National Allied Health Casemix Committee was formed in 1993 to advance allied health participation in casemix. The Committee established the Australian Allied Health Activity Classification which has been included in the procedure listing in ICD-10-AM. The committee has also refined procedure-related costs, which define allied health inputs in terms of clinical care, clinical service management, teaching and training, and research. These changes have allowed allied health professionals to compare inputs and outputs and measure outcomes in terms of quality, value and resource utilisation.²

Clinician-led Classification Developments

AN-DRGs: The Beginning

In 1991, the ACCC coordinated the first clinical evaluation of inpatient classifications so that clinically relevant

recommendations for the development of an Australian inpatient casemix classification could be identified. The classification, AN-DRGs, was split into Major Diagnostic Categories (MDCs) which are defined by body system or disease type, and generally correspond with a particular medical specialty. The MDCs were further split by medical interventions and surgical procedures. Within each of these categories, there is a further split based on factors such as type of procedure, complicating clinical factors (CCFs) and other non-clinical factors that differentiate the processes of care.

In general, assignment of episodes to MDCs was done solely on the basis of the principal diagnosis. However, exceptions existed that resulted from clinical input. These included situations where secondary diagnoses are considered for purposes of MDC assignment e.g. HIV, multiple trauma, and quadriplegia/paraplegia; and where the patient's age (less than 29 days) allows direct assignment to MDC 15 (Newborns and Other Neonates). Episodes which are highly resource-intensive are also handled differently and are assigned directly to one of the AN-DRGs (listed under a pre-MDC category). Examples include transplants, tracheostomies and extracorporeal membrane oxygenation (ECMO) without cardiac surgery.

The early versions of AN-DRG were criticised by clinicians because they did not take adequate account of clinical complexity and severity. AN-DRG Version 3.0 addressed this deficiency by making use of surrogate indicators of severity. These surrogate indicators of severity were referred to as CCFs. They stratified severity using factors such as age, malignancy, complications and comorbidities. For clinicians, this change was an acknowledgement that for a single diagnosis there were variations in the clinical care provided which was directly related to the severity of a clinical presentation.

AR-DRGs: A New Beginning

The Australian Refined Diagnosis Related Groups (AR-DRGs) classification represents a significant clinical refinement to the acute inpatient classification. It has been produced by the Commonwealth Department of Health & Aged Care, in consultation with the ACCC, the CCCGs and the NCCH.

The first version (AR-DRG version 4.0) used ICD-9-CM diagnosis and procedure codes. The following version released in 1999 (AR-DRG version 4.1) used ICD-10-AM (1st edition) codes.³ The classification is similar to AN-DRGs in that it is based on hierarchies. Significant enhancement to severity measures occurred which resulted in the CCF being modified. The CCF was replaced with a revised Complication and Co-morbidity Level (CCL) and Patient Clinical Complexity Level (PCCL) assignment. A

detailed description of these changes are available on the Internet.⁴

The numbering system for the AR-DRGs is considerably different to that used in the AN-DRGs. The system has three levels, namely 1) the broad group to which the DRG belongs (usually the MDC e.g. Diseases and Disorders of the Nervous System); 2) the location in relation to adjacent DRGs; and 3) the existence of splits based on resource consumption (Table II). These changes were made to allow for the clinical expansion of the classification over time.

Ambulatory

The ambulatory classification system was a priority for health care services within Australia. To this end, the development of an ambulatory classification system was referred to the ACCC Ambulatory Sub-Committee in late 1994. Initial consideration was given to adopting existing ambulatory classification systems however; investigation into the local and overseas classification systems failed to identify any that met the needs of Australian health services, even if they were modified. As a consequence of this analysis, consideration was given to developing an Australian ambulatory classification system from first principles. The principal design focus was the utilisation of such a system for payment purposes although clinical meaning and the potential to enhance health system management were also considered an imperative.

The Outpatient Costing and Classification Study was subsequently commissioned by the Department of Health and Family Services to evaluate the suitability of an experimental Developmental Ambulatory Classification System (DACS). Data on the full range of ambulatory

services (outpatient clinics, emergency departments and allied health services) were collected prospectively from a stratified sample of 28 public hospitals. There were 248,608 encounters captured in the study representing 1% of the total ambulatory encounters in Australia.⁵

As a result of this study, a clinic-based classification for outpatients and allied health departments was introduced nationally in 2001. This was not unexpected as ambulatory care takes place in a relatively constrained environment where clinicians designate "time slots" for their patients based on criteria relevant to their specialty areas. An emergency department classification was also developed and introduced nationally in 2001.⁶

Sub-Acute and Non-Acute Patient (SNAP) Classification System

With classification systems for acute inpatients and non-admitted patients being well catered for, clinicians began to focus on the non-acute area. This was because sub-acute care (palliative care, rehabilitation medicine, psycho-geriatrics, and geriatric evaluation and management) and non-acute care (nursing home, convalescent and planned respite care) was not adequately described by existing casemix classifications. It was noted early on that this group of patients was appreciably different to acute inpatients as their predominant treatment goal was maintenance or enhancement of quality of life and/or functional rather than to treat or cure a disease process.

To develop this classification, the Australian National Sub-Acute and Non-Acute Patient Casemix Study was conducted in 1996 in 99 hospital and community health sites in Australia.⁷ Over 30,000 episodes of care were analysed. This research was strongly supported by clinicians

TABLE II: THE NUMBERING CONVENTION: EACH AR-DRG CONSISTS OF FOUR ALPHANUMERIC CHARACTERS ORGANISED IN AN "ADDS" FORMAT

Character	Descriptor	Indicator
First Character "A"	Different letters of the alphabet (A – Z) have been used to signify the broad group to which the DRG belongs, while the number '9' has been used to identify Error DRGs.	Indicates the broad group to which the DRG belongs e.g. MDC
Second and Third Characters "DD"	Different non-sequential numbers have been used to identify the adjacent DRG.	Numbers have been used to identify the partition to which the adjacent DRG belongs. Three separate ranges 01 to 39, 40 to 59 and 60 to 99 have been used to indicate the surgical, other and medical partitions, respectively.
Fourth Character "S"	A: Highest consumption of resources B: Second highest consumption of resources C: Third highest consumption of resources D: Fourth highest consumption of resources Z: No split for adjacent DRG.	Identifies the split that ranks DRGs within adjacent sDRGs on the basis of their consumption of resources.

AR-DRG: Australian Refined Diagnosis Related Group; MDC: Major Diagnostic Category

and has resulted in a robust classification being developed. The resultant classification, the Australian National Sub-Acute and Non-Acute Patient Classification System (AN-SNAP), has been finalised and implemented nationally.

Clinicians and Costing

It is essential that clinicians understand and contribute to the development of casemix costing systems and the cost data collections. Without this involvement, the refinement of the classification system cannot proceed. It also results in clinicians developing a better understanding of how cost data is collected and applied at a local and national level. Clinician managers, in particular, need valid patient costing data if they are to benchmark and improve cost-effectiveness while maintaining and enhancing quality.

The ACCC actively participated in the costing process by assisting in the refinement of the national cost weights and national service weights, which underpin the hospital payment system. In the initial phase of casemix implementation, these data were derived from a "cost modelling" approach. This approach had inherent limitations. Health has now moved to use a "patient costing" approach to overcome these limitations.

Teaching and Research

With the introduction of casemix to inform the budget setting process in Australia, clinicians were concerned that this would adversely impact on the funding of teaching and research because they are not funded directly under a casemix funding system.⁸

To ascertain the impact of research and education in Australian hospitals, two large-scale government-funded consultancies were undertaken in 1994 and 1996. These consultancies acknowledged that the costs of teaching and research in Australian teaching hospitals could not be accurately separated from the costs of direct patient care. As a consequence, individual Australian State and Territory governments have provided teaching and research grants to teaching hospitals to defray these costs.

Aboriginal Health

Targeted analyses were undertaken by the ACCC in specific high-risk areas, such as those where vulnerable patient groups could be compromised following the implementation of casemix-based funding for hospitals. An example of this type of activity relates to the analysis undertaken in 1993 to determine if the treatment of Aboriginal (compared with non-Aboriginal) inpatients differed significantly. This was an important issue to be considered in the Australian context where there is substantial evidence in the medical literature of poor health

outcomes for Aboriginal and Torres Strait Islander people despite high hospital utilisation rates.

The research concluded that Aboriginal patients had a consistently longer average length of stay compared with non-Aboriginal patients. More importantly, the research confirmed a clinical perception that Aboriginal inpatients consumed 39% more resources for the same DRG than non-Aboriginal inpatients.⁹ As a consequence of this clinician lead research, special funding arrangements have been established to address this discrepancy.

ICD-10 and the National Centre for Classification in Health

The NCCH¹⁰ was established across two university campuses, the University of Sydney and Queensland University of Technology, following recommendations from the ACCC that a national body should be established to coordinate the refinement of coding systems in use in Australia. This recommendation was based on the observation that further clinical refinement of the casemix classification systems was not possible where data were collected using the ICD-9-CM coding system, which in the Australian environment was not able to adequately code either procedures or diagnosis.

With the establishment of the NCCH, Australia has developed both a centre of excellence in health classification theory and an expert centre in clinical coding systems. The NCCH provides services, which are accessible, support the effective and efficient use of health data, are client focussed, and emphasise data quality.

The NCCH has made a major contribution to the development of a reliable and valid classification and coding systems by:

- developing and publishing classification systems for use in Australia, including the ICD-10-AM;
- recommending national standards for classifications;
- developing and promoting standards of coding practice, including the accreditation of clinical coders; and by
- developing quality improvement processes relating to documentation and coding.

Of these, the most striking achievement of the NCCH has been the development and national implementation of the *International statistical classification of diseases and related health problems, 10th revision, Australian modification (ICD-10-AM)*¹⁰ coding system which was introduced in 1998. This system includes the Australian extensions to the World Health Organisation ICD-10 classification, in addition to a limited number of specific Australian disease codes. An important feature of the system is the arrangement whereby the procedure codes are based on the same system that is in use in the private

TABLE III: THE SERIES OF ACCC-SPONSORED SPECIALTY CODING BOOKLETS

Ophthalmology
Dermatology and Plastic Surgery
Ear, Nose, Mouth and Throat
Immunology Rheumatology and Infectious Diseases
Nephrology and Urology
Oncology and Haematology (revised edition)
Neonatology and Paediatrics
Obstetrics and Gynaecology
Cardiovascular Medicine and Surgery (revised edition)
Respiratory Medicine and Surgery (revised edition)
Gastroenterology and Hepatobiliary
Mental Health, Drugs and Alcohol
Neurology and Neurosurgery
Injury
Orthopaedics
General Surgery
General Medicine

ACCC: Australian Casemix Clinical Committee

sector, the Commonwealth Medicare Benefits Schedule (MBS). This meant that the classification of procedures in the public and private sectors is now more consistent.

The NCCH also took a lead role in the publication of a series of ACCC-sponsored specialty booklets which targeted both clinicians and coders (Table III). The series contains specialty specific coding information relating to ICD-10-AM and casemix. The booklets have achieved their desired aim of improving data quality by emphasising to clinicians the importance of accurate and complete clinical documentation and by providing an overview of specialty-specific casemix issues.

Conclusion

During widespread consultation over the last 10 years, it has become clear that many clinicians have learned the language of casemix and are familiar with the casemix classification systems and the cost data relevant to their clinical specialty. They have also had the opportunity to contribute significantly to the development of meaningful classifications relevant to their specialty through their

involvement with operational research. This has resulted in the development of robust series of classification systems in all major environments where clinical services are delivered.

The success of casemix is and will continue to be dependent upon the participation of clinicians (including doctors, nurses and allied health professionals), clinical coders, financiers, and computer and information systems staff. The most crucial participants will, however, remain the clinicians.

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